

THE IMMIGRATION OF LEPIDOPTERA
TO THE BRITISH ISLES IN 1981, INCLUDING THAT
OF THE MONARCH BUTTERFLY:
DANAUS PLEXIPPUS L.

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(Concluded from page 87)

ANNEXE III

The Monarch or Milkweed Butterfly (*Danaus plexippus*
L.) in 1981.

The records listed below are essentially of sightings only, since few of the butterflies are known to have been caught. Almost half of them came from the numerous watchers in the Isles of Scilly who were primarily engaged in studying the simultaneous immigration of at least a dozen species of North American birds. We understand that, as with the birds, multiple sightings of the same butterfly were as far as possible eliminated from the daily totals; but in the limited areas of the islands repetitive sightings of the same insect must surely have been frequent during some 20 days of record spread over five weeks. The largest number mentioned as having been seen in one spot simultaneously was three or four round an apple tree on St. Agnes on September 26/7, though there are also references to "several" roosting collectively on various days among Monterey pines near the airport of St Mary's. Some duplication may also have occurred as the Monarchs moved about on the mainland of Cornwall and South Devon and elsewhere. It is therefore not possible to estimate how many individuals are represented by more than 130 sightings listed. It is however safe to say that the immigration of 1981 was of at least the same order as those of 1933 (40 records) and 1968 (65), which were by much the largest since the species was first noted here in 1876.

Four forerunners of the invasion were seen on September 24, curiously spread between the Isle of Man after a severe south-westerly night gale, Co. Kerry, St Mary's, Scilly, and one observed 100 miles further south at sea off Ushant, which perhaps did not reach Britain. On September 25 there were over a dozen sightings, with Scilly in the van but with singles in Cumberland, West Cornwall, South Devon, South Hampshire, Pembrokeshire, and even co. Wexford, all in near-coastal localities; in the three following days, September 26 to 28 over 40 were reported, including nine in Pembrokeshire, one in Dorset and a single presumably fellow travelling American Painted Lady (*Cynthia virginensis* Drury) in Glamorgan. Weather maps and wind directions show September 24, 25, and daylight hours of 26 as the most likely period for actual arrivals of

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Monarchs in south-west Britain; on the night of September 26 and until 30 there was a clear-cut influx of nocturnal immigrants, mainly *Herse convolvuli* and *Rhodometra sacraria*, which probably originated in Spain or North Africa, and came with a rather more southerly air stream. Further arrivals of Monarchs in October seem unlikely; a pronounced recovery in the number of sightings from October 4 to 7 is probably attributable to better weather and more observation over the week-end.

Many reports indicate that the first instinct of Monarchs after arrival was to feed at almost any garden or wild flowers available; buddleia, michaelmas daisies, sedum, golden rod, fuchsia, hydrangea, heather, gorse are all mentioned as attractive to them. In Scilly a number seem to have settled down, and the records of them continue until October 27. Their habit, noted by several observers, of roosting gregariously upside down on Monterey pines agreed with American experience of their preparations for hibernation in the south; a watch for possible survivors even in Scilly should be kept in the spring of 1982. Others, including that seen at sea between Scilly and Penzance on September 28, moved on. The paucity of October records in mainland Cornwall and South Devon may be due to outward movement, which reached far enough along the South Coast to provide four sightings in Sussex between September 30 and October 10; two seen in Merioneth on October 1 and 4 probably came north from Pembrokeshire. About the only example reported far inland, one seen near Thame, Oxfordshire there is doubt, as it had been suggested that this may have resulted from local rearing of larvae in captivity.

The simultaneous presence of so many North American birds makes it clear that this compact invasion of Monarchs originated there, and not in the other possible sources in the Canary Islands or Madeira, from which, to judge from their associations with other immigrant species, a few examples may have come in other years. Meteorological information shows that some of the annual southward movement of Monarchs in North America must have been diverted, probably in the states of New Hampshire and New York on September 20 or 21 by very strong west and south west winds which blew in a broad arc round a very deep depression, which moved quickly across the north Atlantic and gave fronts which crossed Britain on September 24 and 25. This implies a flight of about 3,500 miles taking about three or four days. It is apparently not known how far Monarchs use mainly gliding flight or add substantially to wind speed in such migrations; but American evidence has shown that their flight is impaired at temperatures below 50° F., so that they are unlikely to travel at high altitudes. Since on trans-Atlantic flight they cannot pause to feed, their net consumption of fat must be large, and this may diminish their powers of long survival after they have arrived; at least it explains their observed urgent desire for refreshment then.

The invasion of 1981 differed somewhat from the last big influx, which was in 1968 (J. F. Burton, *Animals* 12: 122-6; R. A. French, *Entomologist* 105: 260). The four forerunners were noted

from August 9 to September 24, and the main arrivals, which began on October 2, were probably less concentrated in date and had their points of impact in south east Devon and Dorset, which provided 45 of the 65 records. These included, however, two reports of ten seen together, on October 6 and in mid October; and the trail of records lasted until November 11. The internal spread was much wider, with single records far inland in Gloucestershire, Worcestershire and Yorkshire.

Since then, two *D. plexippus* were reported in 1969 and singles in 1971, 1972, 1974 and in each year from 1977 to 1980, not all of which are above suspicion of being escapes or releases from captivity. There was a small but definite immigration in 1970, when seven or eight were seen, as well as two *C. virginiensis*, and another in 1973, of which there were over a dozen reports. As some of these records from 1969 to 1980 have not been published, they have been listed at the end of this note.

The Record

AT SEA. Off Ushant, 46° N 58° 7'02" W, September 24, 3.30 pm., flying round s.s. Canberra, one; an American Purple Martin also seen (R. Burridge per M. Rogers); seen from m.v. Scillonian midway between Penzance and Isles of Scilly, September 28.

CORNWALL, ISLES OF SCILLY. Daily numbers sighted by bird-watchers (per D. Hunt and R. D. Penhallurick): St Mary's, September 24 (1); 25 (6 plus); 26 (5 plus); 27 (1 plus); 28 (2); 30 (5); October 1 (1); 4 (1); 5 (6 plus); 6 (2); 7 (4); 10 (1); 11 (5); 12 (3); 13 (2); 14 (1); 15 (1); 18 (3); 22 (1). St Agnes, 25 (1); 27 (3); 28 (1); October 5 (1); 6 (1); 7 (1). Gugh, September 25 (1). St Martin's, October 5 (1). Tresco, September 26 (1); 27 (2); 30 (1); October 4 (1); 12 (1). Other records, some probably included in the numbers above: St Mary's September 24/27, one seen on several occasions (Prof. Harvey per D. Agassiz), 28, one seen on a tamarisk hedge by St Nicholas church, Old Town (M. J. Zealley per RDP); October 13 and 18, one seen beside the airport (M. Sell per R. I. Lorimer); 13, one watched by J. Randall near the airport, imbibing resin from a pine tree; other reports of these Monterey pines serving as a roost and base for flights during bright days (Archer-Lock, *Ent. Rec.*, 93: 201); 27, one gliding along young pines; settled; flying into mature pines (Foggitt, *Ent. Rec.*, 93: 202). St Agnes, September 26/27, four reported around an apple tree, which also contained an American Magnolia Warbler (Foggitt, *ibid.*). St Martin's, September 26 or 27, one followed along the coast from opposite Plumb Island to White Island (K. & J. Jamieson per D. Hunt).

CORNWALL, W. Kynance, September 25 (or possibly 24), a.m., one watched crossing the stream and settled on montbretia (Mr & Mrs Marrifield per RDP); 25, Nancledra, one watched on fuschia and buddleia (E. M. P. Simpson per RDP, and Smith, *Ent. Rec.*, 93: 201); 26, Lizard Downs, about noon moving

south and feeding on *Erica vagans* (Major-Gen. P. G. Turpin per RDP); St Levan near Lands End, by Mr. Garceau (Smith, *ibid.*, and RDP); 27 Ashton near Breage, on buddleia and hydrangea (J. Fairbrass per RDP); Mylor Harbour, sighted from boat (J. Cook & M. Hillyer per RDP); Kennack, 28.9, before noon, flying and settling on a hedge with buddleia nearby; Hayle, before noon, flying over lucerne (Mrs C. Cook per RDP); Lamorna, seen for ½ hour about noon, mostly on escallonia; photographed; flew westwards (D. Tangye per RDP); Loe Pool, Porthleven, 3 p.m., flying along a path and among reeds (Major-Gen. P. G. Turpin per RDP); between Lizard and Housel Bay, 30, 3p.m., one seen from cliff path being blown along the cliff face towards Housel (Mr & Mrs R. J. Williams per RDP); Mount Hawke, late September, on a bush by the main street (Mrs Battersby per RDP); 29 or 30, Housel Bay, one seen flying south west on the cliffs at Housel Bay east of Lizard, finally turning inland and disappearing near the lighthouse (D. Wills per B. Elliot).

CORNWALL, E. Near Black Head, St. Austell, September 27, about noon, one settled on heather (Dr G. Potts per G. M. Spooner); Nare Head, 6 p.m., settled on gorse, then flying off in relaxed flight and returning eastwards (G. P. Gill per RDP); 28, near Gorran Haven, a male picked up dying in the road (Miss F. Dunn per RDP); 30, Duchy Nurseries, Lostwithiel, a damaged female found on brambles and taken home, where it was still alive on November 1 (B. Jackson per RDP).

CUMBERLAND, Sellafeld, on coast north of railway station, September 25, one female caught by F. Downton (Kydd, *Ent. Rec.*, 94: 37).

DEVON, N. Tunnels Beach, Ilfracombe, early October, one captured by K. Wilson and retained (*Western Morning News*, 6.x. 1981) Lundy Island, 25.9, one arriving over the sea at the landing beach, then again flying inland; seen frequently by other observers during the following week (C.W. Dee).

DEVON, S. September 25, Noss Mayo, one seen at close quarters on buddleia and flying northwards (G. M. Spooner per RDH); 25 or 26, one seen in Plymouth City Centre (per Plymouth City Museum); 26, Plymstock, about noon, one flying eastwards ahead of car (Dr. Q. Bone per G. M. Spooner); 27, Kingsbridge, one seen over michaelmas daisies, and another at Prawle Point among bracken (V. Tucker per RDP, and Archer-Lock, *Ent. Rec.*, 93: 199); 27, near Slapton Ley, probably three insects in several hours, one of which frightened a stonechat from its gorse perch; another, found damaged on the beach, remained alive in Plymouth Museum for about two weeks (A. Archer-Lock, V. Tucker and other observers); ? 26 or 27, Arreton Gifford, one reported by telephone (G. M. Spooner per RDH); 28, Prawle Point, four seen between 1 and 6 p.m. on the same ground as on 27 (P. J. Hopkin); Slapton, October 6, one seen (per RDP); no exact date, Newton Ferrers, two (per RDP).

DORSET. Winspit, Worth Matravers, September 26, one seen and identified (Dr R. Green); undated, Portland Bill, two, and another nearby (per RDH).

HAMPSHIRE, S. Lymington, September 25, a female caught flying in a neighbour's garden and retained (A. Harmer); 27, one seen closely after flying in from the sea at Pennington Marshes (Mr & Mrs R. Allison per B. Goater); 30, Fareham, one at buddleia at 11.30 a.m. and the same one (or another) the following day (Mrs. J. Carpenter). October 13, one flying over the seawall, then NNE inland (G. R. Elliott).

ISLE OF MAN. Ballakaighan, Castletown, September 24, in SW wind after severe south westerly gale, one, probably male, hovered briefly over golden rod, settled on a willow tree, and moved northwards over open farmland (Hedges, *Ent., Rec.*, 93: 202).

[OXFORDSHIRE. Long Crenden near Thame, no exact date, one seen flying in a garden by Mrs B. Woodell (per Brian Wildridge; *Guardian*, 20.x.1981 refers). Possibly an escape.]

SUSSEX, E. Pett, October 1, one (M. Cowell per CRP); Rottingdean, 8, one (J. Woodman per CRP).

SUSSEX, W. Kingston Gorse, Worthing, 30.9, one watched by Col. Searle on nettles for 2½ minutes (Col. Searle per Church, *Ent. Rec.*, 93: 202); Church Norton, Pagham Harbour, October 10, one watched flying about churchyard and into adjacent clump of conifers (E. Rayner *pers. comm.*; *Guardian*, 21.x.1981 refers).

WALES

CARMARTHENSHIRE. Pembrey, September 28, four seen on sedum and michaelmas daisies (Mrs Watson per J. Comont).

GLAMORGAN. Penrice Castle, Gower, September 28, one American Painted Lady (*Cynthia virginensis* Drury) seen on flowers and ground (Lipscomb, *Ent. Rec.*, 93: 242).

MERIONETHSHIRE. Dyfi N. N. R., October 1, one seen flying south west over the estuary (R. Bovey per J. Heath); 4, Penmaen Pool, Dolgellau, one seen in a garden by Dr P. I. Clark (Kydd, *Ent. Rec.*, 94: 37).

PEMBROKESHIRE. Dale Fort Marine Field Station, Dale Point, September 25, one feeding at flower bed (M. Rodgers). St Ishmaels, September 26, one (N. Young per J. Comont); St Clears, one (R. Howells per JC); 27, Littlehaven, one (G. Brace per JC); 29, Skomer Island, one (Mrs R. Alexander per J. Heath); October 4, Gelliswrik, one (Mrs Rusper per JC); 5, Preseli, one landed on car near the ITV mast (Mrs Connor per JC) 7, Haverfordwest, one in garden (per JC).

IRELAND

CORK, W. Cape Clear Island bird observatory, September 29, one (per R. F. Haynes).

GALWAY. Galway City, October 2, one seen in a garden (per R. F. Haynes).

KERRY, S. Inch Sound near Killarney, September 24, one resting on Marram grass, and seen again by others later that day (J. Kirsley).

WEXFORD, Gt. Saltee Island, September 25, one (per R. F. Haynes).

The authors are especially grateful to R. D. Penhallurick of the Royal Institution of Cornwall, Truro; to John Heath, National Biological Records Centre; to J. Comont, Haverfordwest, Dyfed; to D. Hunt, of Scilly, and R. F. Haynes, of Killarney, for their help and advice for the preparation of this list. It is, however, certainly far from complete, and further records will be very welcome for later publication.

1969 - 1980

1969 NORFOLK, E. Ditchingham, 7.9. (per French). HANTS, S. Winchester, 9.9. (per French).

1970 CORK, W. Fota Is., end May/early June (per French).

CORNWALL, W. Ruan Minor, August, three or four seen on buddleia, one later on hydrangea (L. A. Bean in RDP, *The Lizard*, 1975: 24). DORSET, Weymouth, 25.9. (per French).

SOMERSET, N. Ashcott, end Aug./early Sept. (per French).

SUSSEX, W. Pagham, Sept, 1st week (Gammon in Rayner, *Nat. Hist. of Pagham Harbour*, 2: 65).

1971 CORNWALL, W. Carlyon Bay, July, one seen on cliffs (Miss M. E. Matthews in RDP, *ibid.*).

1972 DORSET, Greenhill, 23.8 (per French).

1973 SCILLY, St Mary's Garrison Walk, 4.10, one seen by five people (French in C-H, *BENHS* 7: 58); 7/14.10, probably three (P.R.G. Marriott in RDP, *ibid.*), St. Agnes, mid 10 (R. P. Demuth, *Ent. Rec.*, 86: 72); CORNWALL, W. Porthleven, 20.9, on cliff, identified by A. J. Moore (French in C-H, *ibid.*; Lieut. Comdr. P. A. E. Bland in RDP, *ibid.*) St Ives or Carbis Bay, early 10, one said to have been seen (RDP, *ibid.*). CORNWALL, E. between Halton Quay and Weir Quay, flying over Tamar (Dr. F. H. N. Smith in RDP, *ibid.*); Fowey School, 19.9., mid-day, female caught and photographed, now in BM (Nat. Hist.) (J. T. O'Neill in RDP, *ibid.*). DEVON, N. Porlock, 30.9, female caught (H. M. Chappel in C-H, *ibid.*). HANTS, N. Kingsclere, early July, one seen by Mrs D. Freeman (C-H, *ibid.*). SURREY, Oxted, 19.10, one photographed by Mrs J. Batchelor (C-H, *ibid.*) CARDS, Ysptyt Ystwyth, 16.9, 2 p.m., caught (J.J. Richards per French).

1974 KENT, W. Eltham, 15.9, at flowers (A. Palmer, per de Worms, *Ent. Gaz.* 26: 38).

1977 GLOS, S. Ryeford, 17.9, one seen and identified (G. H. Mansell, *pers. comm.*).

1978 SURREY, Epsom, 11.9, male seen in garden by Mrs. Y. Stevens (P. Holdaway, *Ent. Rec.* 91: 27).

1979 ISLE OF WIGHT, Yaverland, 6.7, photographed on escallonia in garden (J. Churcher in RFB & C-H, *Ent. Rec.*, 92: 95).

1980 WESTMORLAND, Grange-over-Sands, 12.10, one seen in garden by Mr and Mrs Bellorby (DWK in RFB & C-H, *Ent. Rec.*, 94: 48).